Project Location and Background

The North Fork Holston River watershed is located in the Tennessee/Big Sandy River Basins in Scott, Washington, Smyth, Russell, Bland, and Tazewell Counties, Virginia. The watershed is approximately 464,840 acres in size, and land use is predominantly forested (69%) and agricultural. Thirty-five (35) segments of the North Fork Holston River and its tributaries including segments of 23 different streams are listed on the *Section 303(d) Total Maximum Daily Load (TMDL) Priority List and Reports* due to violations of the state's water quality standards for fecal coliform bacteria. The North Fork Holston River TMDL was completed in September 2012, and a TMDL implementation plan was completed shortly thereafter in June 2013 and approved in February 2016. There are three implementation projects underway: Scott County (started in July 2017), Washington County (started in September 2017), and Smyth County (started in November 2018). In addition to these current projects, agricultural BMPs funded by the Department of Conservation and Recreation (DCR) since January 2014 are also reported herein.

Implementation Highlights

The North Fork Holston River TMDL implementation projects are administered by the Lenowisco Planning District (Scott County), Holston River Soil and Water Conservation District (Washington County), and Evergreen Soil and Water Conservation District (Smyth County). Table 1 shows BMPs implemented since implementation began in 2014 (including agricultural BMPs installed since the IP was completed) and overall implementation goals for the project area. The projects in Washington and Smyth Counties include both agricultural and residential BMPs, while the one in Scott County focuses only on residential septic BMPs.

(*continued on Page 2*)

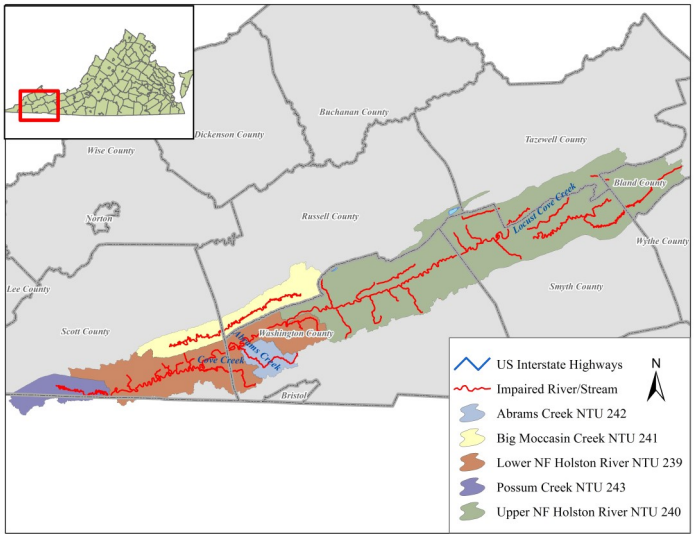


Table 1: NF Holston River BMP Summary: January 2014—June 2019

Control Measure	Units	Goal	Installed	%
Agricultural				
Stream Exclusion Fencing	F	3,664,605	192,103	5
Stream Exclusion Fencing	S	2,053	99	5
Stream Exclusion Maintenance	F	274,868	3,836	1
Forested Riparian Buffer	F	N/A	8,822	N/A
Riparian Buffers	A	N/A	270	N/A
Improved Pasture Mgmt.	A	17,945	300	2
Conservation Tillage	A	270	0	0
Cover Crops	A	N/A	1,135	N/A
Waste Control Facility	S	N/A	5	N/A
Residential Septic				
Septic Tank Pump-out	S	11,590	96	1
Connection to Public Sewer	S	6	0	0
Septic System Repair	S	525	0	0
Septic System Installation	S	1,331	1	<1
Alternative Waste Treatment System	S	567	0	0
Pet Waste				
Pet waste education program	P	1	0	0

A = Acres, F = Linear Feet, S = System, P=Program; Note: BMP counts only include 319-funded and state VACS. NRCS EQIP funded practices are not included.

The Virginia Nonpoint Source Management Program: The Virginia NPS Management Program is managed by the Virginia Department of Environmental Quality (DEQ) and is funded, in part, through grants from the U.S. Environmental Protection Agency, under the Clean Water Act Section 319(h). For more information regarding Virginia's Nonpoint Source Management Program, please visit us on the web at: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/NonpointSourcePollutionManagement.aspx . An electronic copy of this report can be found here: http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL/TMDLImplementation/TMDLImplementationProjects.aspx General NPS Program questions? email: npsgrants@deq.virginia.gov

Implementation Highlights— Continued

Cumulatively, these projects have resulted in the implementation of over 36 miles of stream exclusion. In addition to some progress on other BMPs listed in the TMDL, 1,135 acres of cover crops and five waste control facilities have been implemented in the watershed.

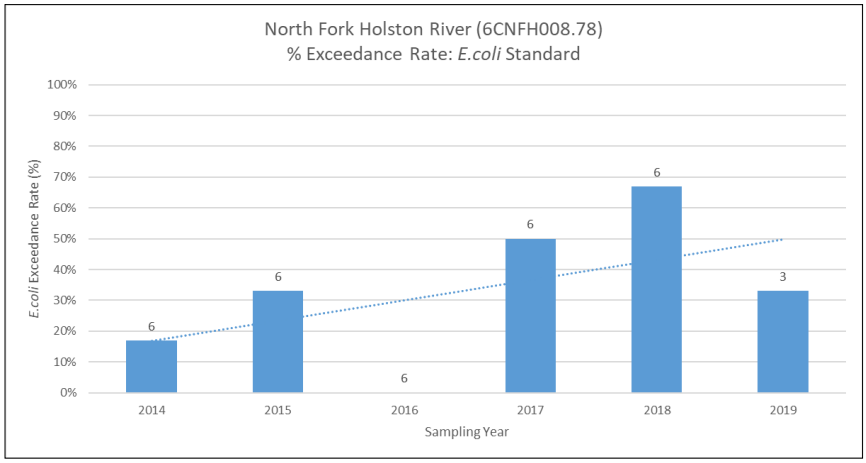
The residential septic program in Scott and Washington Counties have overcome their initial challenge of acquiring a properly licensed contractor to perform the work. In fact, all three projects (Scott, Washington, and Smyth Counties) are using the same contractor to implement all of their residential septic work, so efficient coordination is needed with the contractor to ensure practices are completed in a timely manner. Bacteria reductions resulting from BMP installations are summarized in Table 2 below.

Period	Pathogens (Coliform) (CFU)
January 2014-June 2019	2.87E+15

Table 2: Pollution Reductions for North Fork Holston River Watershed

Water Quality Monitoring Results

Water quality data collected by DEQ for the period of 2014 through 2019 were analyzed to determine the impact of BMPs implemented in the project area on *E. coli* violation rates and associated long-term trends, if any, in water quality. The bar graph below shows the percent violation rate for samples collected annually at monitoring station 6CNFH008.78, which did not meet the water quality standard of 235 cfu/100 mL. The number of samples collected each year is shown above each bar. The linear regression fitted to the data shows a slight increase in bacteria violation rates over the sampling years with a slight reduction in 2019. This indicates a possible decline in water quality in the North Fork Holston River. Monitoring over a longer period of time with consistent trends will be needed to corroborate water quality changes. The remaining three sample results in 2019 will be available in January 2020.



Graph 1: *E.coli* data for the North Fork Holston River (Station 6CNFH008.78), 2014-2019

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